



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Hisashi Tsukamoto et al.

Serial No: 10/666,860

Filed: September 17, 2003

For:  ELECTRIC STORAGE BATTERY  
CONSTRUCTION AND METHOD OF  
MANUFACTURE

Art Unit: 1795

Examiner: LEE, Cynthia K.

MS Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPELLANT'S BRIEF**

I. **REAL PARTY IN INTEREST**

The real party in interest is Quallion, LLC the assignee of the above referenced application.

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II. RELATED APPEALS AND INTERFERENCES

No other appeals or interferences are known which will be affected by this appeal.

### III. STATUS OF CLAIMS

The application under appeal includes pending claims 20-28, 67, and 78-83. Claims 1-19, 29-66, and 68-77 are canceled. Claims 20-28, 67, and 78-83 were previously presented.

1. Claims 20, 22-25, 67, and 78-82 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 3,510,353 (McHenry).
2. Claim 21 stands rejected under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 4,863,815 (Chang).
3. Claim 27, 80, and 83 stand rejected under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 4,476,624 (Klein).
4. Claim 28 stands rejected under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 6,387,561 (Nemoto).
5. Claims 20-28, 67, and 78-83 stand provisionally rejected on the grounds of non-statutory obviousness-type double patenting in view of U.S. Patent Application serial number 10/665,440.
6. Claim 26 is objected to as being dependent upon a rejected base claim, but would be rewritten in independent form.

IV. STATUS OF AMENDMENTS

The Applicant submitted an amendment on March 26, 2008. In Response a Final Office Action was mailed on June 6, 2008 (the Office Action). A Pre-Appeal Brief request for Review was then filed on September 8, 2008. A Notice of Panel Decision from Pre-Appeals Brief Review was mailed on September 25, 2008. However, this document was not received by the Applicant and the Applicant submitted evidence of this result to the Examiner. As a result, a second Notice of Panel Decision from Pre-Appeals Brief Review was mailed on August 19, 2009. This Appeal Brief is filed in response to the second Notice of Panel Decision from Pre-Appeals Brief Review.

In view of the above actions, the pending claims are the claims that were present in the amendment mailed on March 26, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In accordance with 37 CFR § 41.37c(1)(v), Appellants provide a brief summary of each independent claim involved in the appeal, where each summary refers to the specification by page and line number and to the drawings by reference number. Appellants note that the citations in this "Summary of claimed subject matter" are provided to identify some portions of the specification related to the particular claims. In the interest of brevity, each claim summary does not necessarily include all references to all relevant portions of the specification and drawings. Accordingly, omission of any reference to the specification or to the drawings should not be construed in any way as an intent to relinquish claim scope, or as an implication or statement regarding the conformance with 35 U.S.C. §112. Appellants respectfully submit that the claims should not be construed as being limited to the embodiments cited in the claim summary, and further submit that other embodiments, as well as the Doctrine of Equivalents, may apply in determining claim scope.

Summary of Independent Claim 20

The steps set forth in claim 20 are illustrated in the progression from Figure 6 to Figure 11, and then to Figure 16A. As a result, these Figures are set forth following the below summary.

Independent claim 20 is directed to a method of constructing an electric storage battery. The method includes providing electrical communication between a first electrode strip (labeled 30 in Figure 6, 11, and 16A) and a pin (the pin is labeled 12 in Figure 6, 11, and 16A and the provision of the electrical communication is found in Figure 6 and page 7, line 22-24). The method also includes positioning a mandrel (labeled 48 in Figure 6, 11, and 16A) on the pin (arrow labeled 54 in Figure 6 and page 7, line 33-34). The method further includes winding (see arrow in Figure 11, and page 9, line 19-22) the first electrode strip together with a second electrode strip (labeled 70 in Figure 11, and 16A) so as to form a spiral roll having at least a portion of the pin within the spiral roll (Figure 16A and page 9, line 19-22). The spiral roll is formed after positioning the mandrel on the pin (progression from Figure 6, to Figure 11, to Figure 16A and page 9, line 20-22). Additionally, the first electrode strip and the second electrode strip are wound together after providing electrical communication between the first

electrode strip and the pin (progression from Figure 6, to Figure 11, to Figure 16A and page 7, line 22-24 in view of page 9, line 20-22).

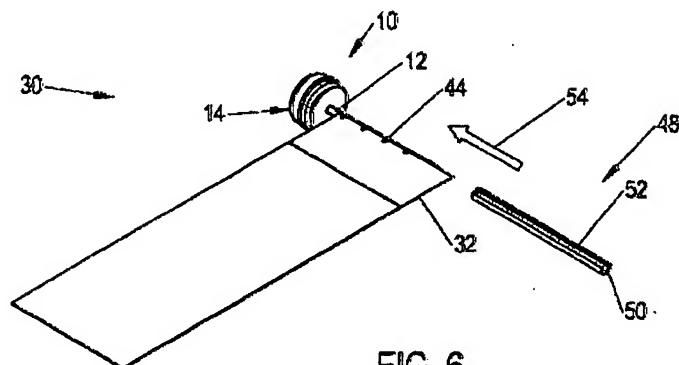


FIG. 6

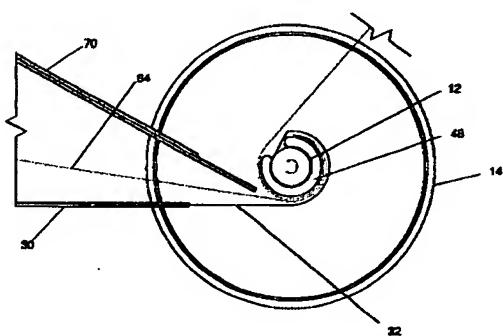


FIG. 11

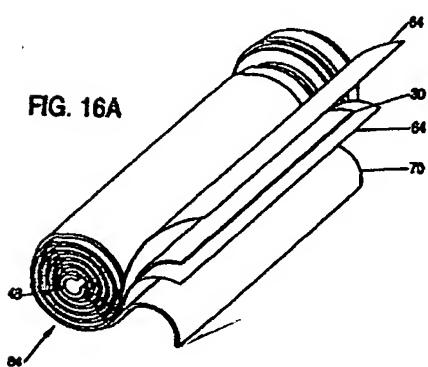


FIG. 16A

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Rejection of Claims 20, 22-25, 67, and 78-82 under 35 USC §103(a) as being unpatentable over U.S. Patent No. 3,510,353 (McHenry).
2. Rejection of Claim 21 under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 4,863,815 (Chang).
3. Rejection of Claim 27, 80, and 83 under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 4,476,624 (Klein).
4. Rejection of Claim 28 under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 6,387,561 (Nemoto).
5. Provisional Rejection of Claims 20-28, 67, and 78-83 in view of U.S. Patent Application serial number 10/665,440.

## VII. ARGUMENT

### 1. Rejection of Claims 20, 22-25, 67, and 78-82 under 35 USC §103(a) as being unpatentable over U.S. Patent No. 3,510,353 (McHenry).

#### **CLAIM 20**

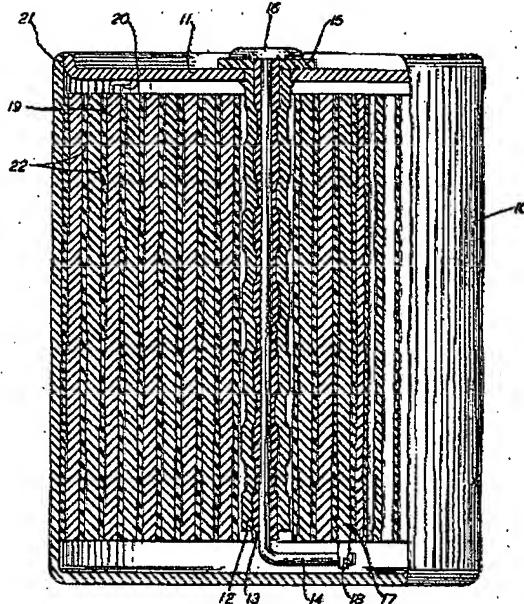
Claim 20 stands rejected under 35 USC §103(a) as being obvious in view of U.S. Patent No. 3,510,353 (McHenry).

*McHenry does not teach or suggest every element of claim 20*

The recent Supreme Court case of *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007) has provided new standards for obviousness rejections, **however, a proper obviousness rejection still requires that the cited art teaches or suggests every element of the claims.** This requirement has been set forth in case law with statements such as “obviousness requires a suggestion of all limitations in a claim.” *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (*citing In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). There is nothing in the *KSR* opinion that directly or indirectly overturned the requirement that the cited art teach or suggest every element of a claim properly rejected as obvious. Further, the Board of Patent Appeals and Interferences continues to cite and apply this standard in decisions such as *Ex Parte H. Garrett Wada, and Matthew B. Murphy* (Appeal 2007-1925, decided on June 25, 2007). As a result, current law holds that an obviousness rejection is not properly supported unless the cited art teaches or suggests every element of the claims.

Claim 20 recites “winding ... (a) first electrode strip together with a second electrode strip so as to form a spiral roll having at least a portion of ... (a) pin within the spiral roll.” Afterwards, claim recites “the first electrode strip and the second electrode strip being wound together after providing electrical communication between the first electrode strip and the pin.” As a result, the pending rejection is not proper unless McHenry teaches or suggests providing electrical communication between the first electrode strip and the pin before winding together the first electrode strip and the second electrode strip.

McHenry includes only one Figure and that Figure is placed below in order to simplify the following discussion:



McHenry teaches that the wire 14, plastic tube 13, and tube 12 shown in the above image are assembled to form a seal (C2, L20-24). McHenry refers to this seal in the following teaching:

... the seal would normally be assembled first followed by and the electrodes placed around the crimped tube 12. The wire 14 would **then** be bent and attached to tab 18 ... (C2, L20-24).

The presence of the bolded term “then” in the second sentence indicates that the actions in the second sentence occur before the actions in the first sentence. As a result, this quotation teaches attaching the wire 14 to the tab 18 **after** placing the electrodes around the tube 12. The act of attaching the wire 14 to the tab 18 places the positive electrode in electrical communication with the wire 14 as is evident from McHenry’s teaching that the “positive electrode 17 is connected through tab 18 to the positive contact wire 14” (C6, L36-28). As a result, the above quotation teaches providing electrical communication between the positive electrode strip and the pin (wire 14) after winding placing the electrodes around the tube 12.

As noted above, the pending rejection is not proper unless McHenry teaches or suggests providing electrical communication between the first electrode strip and the pin **before** winding together the first electrode strip and the second electrode strip. However, McHenry teaches that these events occur in the reverse sequence. Teaching that events occur in a particular sequence does not teach or suggest the reversal of these events. Accordingly, McHenry does not teach every limitation of claim 20 and claim 20 is patentable over claim 20.

*The modification supporting the rejection is associated with difficulty for one of ordinary skill*

The recent Supreme Court case of KSR Int'l v. Teleflex, Inc. 127 S.Ct. 1727 (2007) has changed the standards that must be satisfied in order to properly support obviousness rejections. In this decision the Supreme court provides that **difficulty for one of ordinary skill in the art to modify a known device to arrive at a claimed device is an indication of non-obviousness.**

KSR Int'l v. Teleflex, Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (2007) and also *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161, 82 USPQ2d 1687, 1690-91 (Fed. Cir. 2007).

The principle asserted in KSR was recently cited by the Board of Patent Appeals and Interferences in *Ex Parte Mary Smith*, Appeal 2007-1925 decided on June 25, 2007.

Importantly, this opinion is labeled a “Precedential Opinion” and includes the statement that “Pursuant to the Board of Patent Appeals and Interference’s Standard Operating Procedure 2, the opinion below has been designated a precedential opinion.” Accordingly, both the Supreme Court and the Board of Patent Appeals and Interferences are currently citing the principle that difficulty for one of ordinary skill in the art to modify a known device to arrive at a claimed device is an indication of non-obviousness.

As noted above, McHenry teaches attaching the wire 14 to the tab 18 **after** placing the electrodes around the tube. When the sequence of events disclosed in McHenry are followed, the electrodes can be rolled (see C2, L36). When electrodes are rolled together the center-most layers of the roll are formed before outer layers. However, the pending rejection is based on reversing this sequence such that the wire 14 is attached to the tab 18 **before** placing the electrodes around the tube 12. A review of McHenry’s Figure shows that there are several layers of the roll between the tube 12 and the tab 18. Once the tab 18 is attached to the tube 12, there is a connection between the positive electrode 17 and the wire 14. Since this connection effectively immobilizes a portion of the positive electrode relative to the positive electrode, the electrodes cannot merely be wound around the tube as disclosed in McHenry. As a result, it is unclear how the electrode roll could be created after the wire 14 is attached to the tab 18. In particular, it is unclear how the inner layers of the roll located between the tube 12 and the tab 18 could be formed after the tab 18 is connected to the wire.

Since it is unclear how the how the roll of electrodes could be created once the wire 14 is attached to the tab 18, the modification proposed in the Office Action results in difficulty for one

of ordinary skill in the art. Since the KSR decision states that this difficulty is evidence of non-obviousness, this difficulty shows that claim 20 is patentable over McHenry.

#### **CLAIMS 22-25, 67, and 78-82**

Since Claims 22-25, 67, and 78-82 each depends from claim 20 and since claim 20 is patentable over McHenry, Claims 22-25, 67, and 78-82 are also patentable over McHenry.

#### **2. Rejection of Claim 21 under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 4,863,815 (Chang).**

Since Claim 21 depends from claim 20 and since claim 20 is patentable over the cited art, Claim 21 is also patentable over the cited art.

#### **3. Rejection of Claim 27, 80, and 83 under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 4,476,624 (Klein).**

Since Claims 27, 80, and 83 depend from claim 20 and since claim 20 is patentable over the cited art, Claims 27, 80, and 83 are also patentable over the cited art.

#### **4. Rejection of Claim 28 under USC §103(a) as being unpatentable over McHenry in view of U.S. Patent No. 6,387,561 (Nemoto).**

Since Claim 28 depends from claim 20 and since claim 20 is patentable over the cited art, Claim 28 is also patentable over the cited art.

#### **5. Provisional Rejection of Claims 20-28, 67, and 78-83 in view of U.S. Patent Application serial number 10/665,440.**

In the event that any of the claims are allowed, the Applicant reserves the right to submit a Terminal Disclaimer in response to this rejection.

Respectfully submitted



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## VIII. CLAIMS APPENDIX

1.-19. (canceled)

20. (previously presented) A method of constructing an electric storage battery, comprising:

- providing electrical communication between a first electrode strip and a pin;
- positioning a mandrel on the pin;
- winding the first electrode strip together with a second electrode strip so as to form a spiral roll having at least a portion of the pin within the spiral roll,
- the spiral roll being formed after positioning the mandrel on the pin, and
- the first electrode strip and the second electrode strip being wound together after providing electrical communication between the first electrode strip and the pin.

21. (previously presented) The method of claim 20, further comprising:

- positioning spiral roll in a case with the pin extending through the case such that the pin serves as a battery terminal.

22. (previously presented) The method of claim 20, wherein the mandrel is positioned on the pin such that the mandrel is in electrical communication with the pin.

23. (previously presented) The method of claim 20, wherein winding the first electrode strip together with the second electrode strip includes rotating the pin.

24. (previously presented) The method of claim 20, wherein an end cap is positioned on the pin,

- the end cap being configured to serve as a cap for a battery case,
- the end cap including an electrical insulator, and
- the pin extending through the insulator.

25. (previously presented) The method of claim 24, wherein the end cap includes a conductive member surrounding the insulator and further comprising:

connecting the conductive member to a case such that the conducting member is in electrical communication with the case and the pin extends into an interior of the case.

26. (previously presented) The method of claim 20, further comprising:

welding the mandrel to the pin.

27. (previously presented) The method of claim 20, wherein

the mandrel includes a tube with a slot in the tube; and

winding the first electrode strip together with the second electrode strip includes inserting a drive key into slot, and employing the drive key to rotate the mandrel and the pin.

28. (previously presented) The method of claim 20 wherein the mandrel includes a channel and further comprising:

injecting an electrolyte into a case for a battery through the channel.

29.-66. (canceled)

67. (previously presented) The method of claim 20, further comprising:

crimping the mandrel to the pin.

68.-77. (canceled)

78. (previously presented) The method of claim 20, wherein the mandrel includes a tube.

79. (previously presented) The method of claim 78, wherein positioning the mandrel on the pin includes positioning the pin in an interior of the tube.

80. (previously presented) The method of claim 20, wherein positioning the mandrel on the pin includes sliding the mandrel onto the pin.

81. (previously presented) The method of claim 20, wherein the mandrel is positioned on the pin such that a portion of the first electrode strip is positioned between the mandrel and the pin.

82. (previously presented) The method of claim 20, wherein the first end of the first electrode strip is connected to the pin such that the pin is in electrical communication with the first electrode strip.

83. (previously presented) The method of claim 20, wherein the mandrel has a c-shaped cross-section.

## IX. EVIDENCE APPENDIX

None.

## X. RELATED PROCEEDINGS APPENDIX

None.